

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Nakas et al.	Conf. No.:	8887
Serial No.:	10/528,923	Art Unit:	1652
Filing Date:	03/23/2005	Examiner:	Prouty, Rebecca E.
Title:	BIOCONVERSION OF XYLAN AND LEVULINIC ACID TO BIODEGRADABLE THERMOPLASTICS	Docket No.:	SUNY-0004-US

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Commissioner for Patents
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PRE-APPEAL BRIEF REQUEST FOR REVIEW

Sir:

Applicants respectfully request that a panel of experienced examiners perform a detailed review of appealable issues for the above-identified patent application pursuant to the Pre-Appeal Brief Conference Program. Claims 1, 3-7 and 9-18 are pending in this application. Claims 2 and 8 were previously cancelled. Claims 10-17 were previously withdrawn from consideration.

In the Final Office Action, Claims 1, 3-7, 9 and 18 are rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over the combination of Lee, Ramsay et al., Bertrand et al., Chung et al. and Jang et al.

Specifically the Office asserts that each of Lee, Ramsay et al., and Bertrand et al. teach the production of the polyhydroxyalkanoate PHB with a microorganism using xylose as the main carbon source.

The Office admits that each of Lee, Ramsay et al., Bertrand et. al do not

teach the use of levulinic acid (LA) as a cosubstrate for the production of P(3HB-co-3HV).

The Office asserts that each of Chung et al. and Jang et al. teach the production of the polyhydroxyalkanoate P(3HB-co-3HV) with a microorganism using glucose as a primary carbon source and LA as a secondary carbon source.

The Office admits that Chung et al. teaches the addition of additional amounts of LA to the culture to maintain the level of LA in the culture at a constant amount.

Upon these five references, the Office concludes it would have been obvious to the skilled artisan to produce the polyhydroxyalkanoate P(3HB-co-3HV) with a microorganism using xylose as a primary carbon source and LA as a secondary carbon source with a second addition of LA to the culture between 16 to 24 hours after the first quantity of LA was added where the second addition of LA is greater than the first quantity of LA.

Applicants respectfully assert, however, that the Office has failed to establish a case of prima facie obviousness under 35 USC 103(a). "To support the conclusion that the claimed invention is directed to obvious subject matter, either the references must expressly or impliedly suggest the claimed invention or the examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references." Ex parte Clapp, 227 USPQ 972, 973 (Bd. Pat. App. & Inter. 1985). Applicant respectfully asserts no convincing line of reasoning from the five references cited to Applicant's invention has been presented by the

Office.

Regarding the Office's citation to five references, Applicants respectively assert that it would not have been obvious at the time of the invention, to have modified and combined these five references as suggested by the Office. It is the Applicants' position that, absent their own teachings, the Office's rejection is legally and logically untenable.

Applicant recites the addition of a first quantity of LA as a secondary carbon source and an additional second quantity of LA at 16 to 24 hours after the first quantity was added in an amount greater than the first quantity is non-obvious.

Bertrand et. al teaches the addition of propionic acid (PA) as a secondary carbon source. Bertrand et al. does not teach a two-stage addition of the secondary carbon source with the second addition being in a quantity greater than the first. Lee and Ramsay et al. do not teach the addition of a secondary carbon source at all, let alone the addition of a secondary carbon source in a two-stage addition with the second addition being greater than the first. The Office admits that neither Lee, Ramsay et al., nor Bertrand et al. teach the use of LA as a cosubstrate for the production of the copolymer.

Jang et al. teaches the addition of LA as a secondary carbon source but does not teach the subsequent addition of LA to the culture after the first addition of LA. Chung et al. teaches the use of LA as a secondary carbon source and teaches the use of additional amounts of LA to maintain the level of LA in the culture at a constant amount. In other words, Chung et al. teaches maintaining

the level of the secondary carbon source – not increasing the level. Applicants assert, therefore, that Chung et al. explicitly teach away from the claimed invention.

Applicants note that each of Lee, Ramsay et al., Bertrand et al., Chung et al. and Jang et al. do not teach the addition of a first and second quantity of a secondary carbon source with the second quantity being greater than the first quantity.

Adding a second quantity of LA 16 to 24 hours subsequent to a first quantity added is not taught or suggested by the cited references in any combination.

Further, neither Chung et al. nor Jang et al. teach or suggest the use of xylose as a primary carbon source. Chung et al. mention several sugars (glucose, sucrose, and sorbitol) as possible carbon sources for the production of the 3HB-co-3HV copolymer using LA as a secondary carbon source. Jang et al. only mention the use of glucose to produce the copolymer. As noted by Bertrand et al., not all sugars are suitable carbon sources (see, e.g., Bertrand et al. at 3136, discussing the unsuitability of lactose as a carbon source).

Finally, none of the cited references provides the suggestion or motivation to combine or modify the teachings of any other cited reference and the Office fails to provide any such reason. In addition, given the respective teachings of each of the cited references, Applicants assert that such a suggestion or motivation to combine or modify the teachings of the cited references cannot be found in the knowledge of one having ordinary skill in the art.

Applicants note the Office's response to the confusion of an objection to claim 8 due to an informality. Applicants noted that claim 8 had been previously cancelled and requested withdrawal of the objection. The Office now states that the objection properly applied to claim 9 and that it was Applicant's burden to have understood this. Applicant respectfully submits that the necessary amendment to claim 9 to obviate the objection does not hinder this pre-appeal review.

Applicants submit that all dependant claims are allowable based on their own distinct features. For brevity, Applicants will forego addressing each of these rejections individually, but reserve the right to do so should it become necessary on appeal. Applicants respectfully assert that none of the rejected claims is obvious in view of any combination of Lee, Ramsay et al., Bertrand et al., Chung et al., or Jang et al. Accordingly, Applicants respectfully request withdrawal of the rejections.

Respectfully submitted,

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